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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/517,631

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Yasuhiro Hegi

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EXAMINER

WINKLER, MELISSA A

ART UNIT

PAPER NUMBER

1796

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/517,631	<b>Applicant(s)</b> HEGI, YASUHIRO	
	<b>Examiner</b> MELISSA WINKLER	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> .                                  | 6) <input type="checkbox"/> Other: _____                          |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :12/13/04; 6/24/05; 6/30/06; 12/14/06.

## DETAILED ACTION

### *Information Disclosure Statement*

The information disclosure statement filed December 13, 2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

### *Claim Objections*

Applicant is advised that should Claim 22 be found allowable, **Claim 23** will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 1 - 23** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 sets forth the limitation “an *organic* compound (B) that is non-compatible with the photo-polymerizable monomer (A).” Claims 5 and 17 then set forth the limitation that the component that is non-compatible with the photo-polymerizable monomer (A) is water, an inorganic compound. Claim 11 also appears to equate compound (B) to water (ie. non-organic). Consequently, it is unclear whether or not the compound (B) is an organic compound. For the purposes of further examination, Claim 1 will be interpreted to set forth a compound (B) that is non-compatible with the photo-polymerizable monomer (A), so that all claims dependent on Claim 1 are encompassed by and not excluded by Claim 1.

Furthermore, Claims 5 and 17 recite the limitation “the *component* that is non-compatible with the photo-polymerizable monomer (A).” There is insufficient antecedent basis for this limitation in the claim. For the purposes of further examination, this component will be interpreted as the “*organic compound* (B) that is non-compatible with the photo-polymerizable monomer (A)” of Claim 1.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1—23** are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 900 808 to Hegi et al. in view of US 5,804,609 to Ohnishi et al.

**Regarding Claims 1, 2, 7, and 19.** Hegi et al. teach a photosensitive composition irradiated by ultraviolet light to form a cured, porous product (Page 10, Paragraph 38). The photosensitive composition comprises photopolymerizable monomers, materials that are incompatible these monomers, common solvents which have solubility in both the monomers and the incompatible materials, and photopolymerization initiators (Page 2, Paragraph 12).

Hegi et al. are silent regarding the surface tension of the photopolymerizable monomers used. However, Ohnishi et al. also teach a composition comprising photopolymerizable monomers such as perfluorooctylethyl methacrylate (Column 8, Lines 23 - 28). While Ohnishi et al. do not expressly disclose a surface tension value, Lines 8 – 10 on Page 31 of the Instant Specification indicate the surface tension of

perfluorooctylethyl methacrylate is  $37.8 \times 10^{-5}$  N/cm. Hegi et al. and Ohnishi et al. are analogous art as they are from the same field of endeavor, namely compositions comprising photopolymerizable monomers and photopolymerization initiators. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use perfluorooctylethyl methacrylate as one of the photopolymerizable monomers in the photosensitive composition taught by Hegi et al. The motivation would have been that perfluorooctylethyl methacrylate provides advantages such as increased hardness in the final cured product.

**Regarding Claim 3.** Hegi et al. teach the composition of Claim 1 additionally comprising photopolymerizable monomers such as neopentyl glycol diacrylate and trimethylolpropane triacrylate (Page 3, Paragraphs 16 and 17).

Hegi et al. do not teach the claimed amount of other photopolymerizable monomers relative to a photopolymerizable monomer with a surface tension of not more than  $25 \times 10^{-5}$  N/cm. However, Ohnishi et al. also teach a composition comprising photopolymerizable monomers wherein perfluorooctylethyl methacrylate, for example, may be added such that comprises 0.1 – 50% by weight of the total polymerizable resin material (Column 8, Lines 23 - 28). At the time of invention, it would have been obvious to a person of ordinary skill in the art to add perfluorooctylethyl methacrylate in the amount taught by Ohnishi et al. to the photosensitive composition taught by Hegi

et al. The motivation would have been that the specified amount of perfluorooctylethyl methacrylate would provide advantages such as a desirable degree of hardness in the final cured product.

**Regarding Claims 4 and 8.** Hegi et al. teach the composition of Claim 1 wherein the compound that is incompatible with the photopolymerizable monomer is triethanol amine (Page 7, Paragraph 23). According to Lines 21 – 22 on Page 31 of the Instant Specification, triethanol amine has a surface tension of  $53.1 \times 10^{-5}$  N/cm.

**Regarding Claim 5.** Hegi et al. teach the composition of Claim 1 wherein the compound that is incompatible with the photopolymerizable monomer is water (Page 7, Paragraph 23).

**Regarding Claims 6 and 9.** Hegi et al. teach the composition of Claim 1 wherein the solvent is isopropyl alcohol (Page 8, Lines Page 25). According to Lines 24 - 45 on Page 31 of the Instant Specification, isopropyl alcohol has a surface tension of  $25.2 \times 10^{-5}$  N/cm.

**Regarding Claim 10.** Hegi et al. teach the composition of Claim 1 is irradiated by ultraviolet light to form a cured, porous product (Page 10, Paragraph 38). Furthermore, the synthesis of the porous resin cured product via photo-curing is a product-by-process limitation that is not further limiting in as so far as the structure of the product is concerned. "[E]ven though product-by-process claims are limited by and



defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695,698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113. Once a product appearing substantially identical is found, the burden shifts to the applicant to show an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1993).

**Regarding Claim 11.** Hegi et al. teach the product of Claim 10 wherein the solvents and incompatible materials have been removed (Page 10, Paragraph 39).

**Regarding Claim 12.** Hegi et al. teach the product of Claim 10 is formed as a film (Page 18, Paragraph 77).

**Regarding Claim 13.** Hegi et al. teach the product of Claim 10 is applied onto a substrate (Page 10, Paragraph 40).

**Regarding Claim 14.** Hegi et al. teach the product of Claim 10 but do not expressly teach it is as part of a liquid crystal display element. However, Ohnishi et al. also teach a composition comprising photopolymerizable monomers wherein the cured composition is part of a liquid crystal display device (Column 10, Lines 53 - 59). At the time of invention, it would have been obvious to a person of ordinary skill in the art to

use the product taught by Hegi et al. as part of a liquid crystal display device. The motivation would have been that the product taught by Hegi et al. could provide advantages such as high contrast and low hysteresis in a liquid crystal display device.

**Regarding Claim 15.** Hegi et al. teach the product of Claim 10 but do not expressly teach it is as part of a liquid crystal recording material. However, Ohnishi et al. also teach a composition comprising photopolymerizable monomers wherein the cured composition is part of a liquid crystal display device (Column 4, Lines 17 – 41; Column 10, Lines 53 – 59; Figure 3). At the time of invention, it would have been obvious to a person of ordinary skill in the art to use the product taught by Hegi et al. as part of a liquid crystal material with a recording feature. The motivation would have been that the product taught by Hegi et al. could provide advantages such as high contrast and low hysteresis in a liquid crystal material with a recording feature.

**Regarding Claims 16 and 20.** Hegi et al. teach the composition of Claim 3 wherein the compound that is incompatible with the photopolymerizable monomer is triethanol amine (Page 7, Paragraph 23). According to Lines 21 – 22 on Page 31 of the Instant Specification, triethanol amine has a surface tension of  $53.1 \times 10^{-5}$  N/cm.

**Regarding Claim 17.** Hegi et al. teach the composition of Claim 3 wherein the compound that is incompatible with the photopolymerizable monomer is water (Page 7, Paragraph 23).

**Regarding Claims 18 and 21.** Hegi et al. teach the composition of Claim 3 wherein the solvent is isopropyl alcohol (Page 8, Lines Page 25). According to Lines 24 - 45 on Page 31 of the Instant Specification, isopropyl alcohol has a surface tension of  $25.2 \times 10^{-5}$  N/cm.

**Regarding Claims 22 and 23.** Hegi et al. teach the composition of Claim 3 is irradiated by ultraviolet light to form a cured, porous product (Page 10, Paragraph 38). Furthermore, the synthesis of the porous resin cured product via photo-curing is a product-by-process limitation that is not further limiting in as so far as the structure of the product is concerned. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695,698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113. Once a product appearing substantially identical is found, the burden shifts to the applicant to show an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1993).

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**Claims 1 and 5** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1, 2, 6, and 9 of U.S. Patent No. 6,447,877. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are obvious variations upon each other.

**Regarding Claim 1.** Instant Claim 1 corresponds to A) a combination of Claims 1 and 2 or B) Claim 9 of U.S. Patent No. 6,447,877. While U.S. Patent No. 6,447,877 does not expressly set forth the surface tension of the photopolymerizable monomer, this limitation is taught by Ohnishi et al. (Column 8, Lines 23 - 28). At the time of invention, it would have been obvious to a person of ordinary skill in the art to use a photopolymerizable monomer with a surface tension in the claimed range, such as perfluorooctylethyl methacrylate, as one of the photopolymerizable monomers in the photosensitive composition. The motivation would have been that perfluorooctylethyl methacrylate, for example, provides advantages such as increased hardness in the final cured product.

**Regarding Claim 5.** Instant Claim 5 corresponds to Claim 6 of U.S. Patent No. 6,447,877.

*Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELISSA WINKLER whose telephone number is (571)270-3305. The examiner can normally be reached on Monday - Friday 7:30AM - 5PM E.S.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/  
Supervisory Patent Examiner, Art Unit 1796  
29-Feb-08

MW  
February 21, 2008